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# REASSIGNMENT OF *COLPIUS INFLATUS* AND A DESCRIPTION OF ITS LARVA (COLEOPTERA:NOTERIDAE)[1]

By Paul J. Spangler and George W. Folkerts
*Smithsonian Institution, Washington, D.C. 20560 and Department of Zoology–Entomology, Auburn University, Auburn, Alabama 36830*

The aquatic beetle family Noteridae presently includes 12 genera primarily from the tropical regions of the world although a few genera and species are established also in the temperate regions. Eight genera of noterids are known to occur in the Western Hemisphere, and of these genera, *Notomicrus*, *Pronoterus*, *Suphisellus*, *Hydrocanthus*, and *Colpius* are reported from the United States. *Mesonoterus* and *Suphis* are known from the tropical regions of Mexico, Central America, the West Indies, and South America and *Siolius* is known only from South America.

The monotypic genus *Colpius* was described by LeConte (1861) for the species, *C. inflatus* LeConte from Florida. Although *C. inflatus* is distinct from the other noterid genera known to occur in the United States, it is very similar to the neotropical noterid genus described as *Suphis* by Aubé (1836). The globose shape of members of the genus *Suphis* is so distinctive that they may be recognized immediately by the unaided eye. The similarity of the adults of *C. inflatus* (Fig. 1) to those of *Suphis* (Fig. 2) aroused our curiosity and resulted in this study.

Adults of *Colpius inflatus* are extremely similar to adults of *Suphis* except that the anterior face of the prosternal process (Fig. 2) is vertical and forms almost a right angle with the

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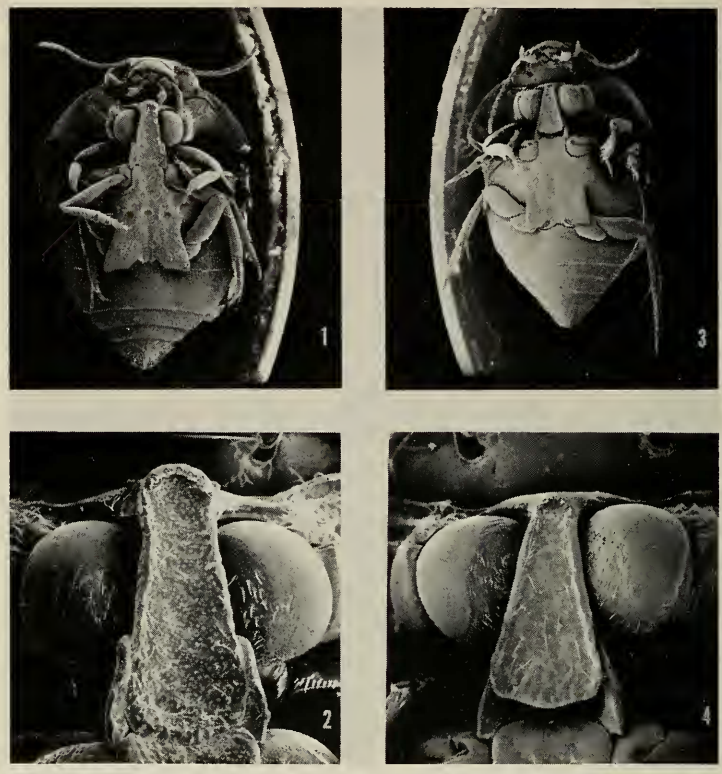
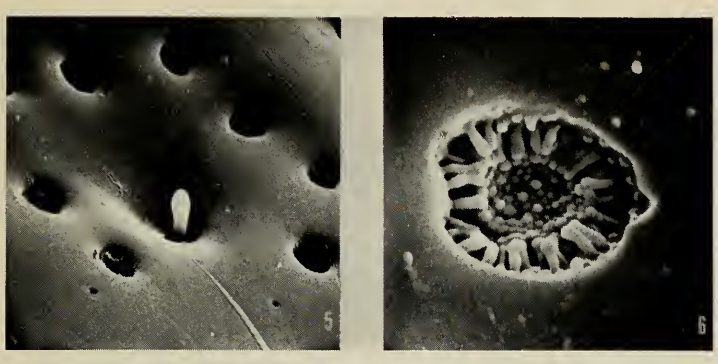



FIGS. 1–2. *Suphis inflatus* (LeConte): 1, adult ♂, ventral view, left elytron removed, photographed at 25 ×, reduced one-half; 2, adult ♂, prosternum, photographed at 115 ×, reduced one-half.

FIGS. 3–4. *Suphis* sp.: 3, adult ♂, ventral view, both elytra removed, photographed at 25 ×, reduced one-half; 4, adult ♂, prosternum, photographed at 100 ×, reduced one-half.

inferior face which is concave and margined. In *Susphis* the prosternum (Fig. 4) is bent in a gradual curve in front of the anterior coxae and does not form a prominent angle. The close similarity in habitus and morphology between *C. inflatus* and species of *Suphis* suggested that perhaps *Colpius* is a synonym of *Suphis*. However, additional evidence supporting this interpretation was desirable before any change was proposed.



FIGS. 5–6. *Suphis inflatus* (LeConte): 5, elytral punctures, humeral area, photographed at 2600 ×, reduced one-half; 6, puncture on prosternal process, photographed at 11,000 ×, reduced one-half.

When Aubé described the genus *Suphis* (1836) he stated (p. 208), "Nous n'en connaissons que deux especes: l'une du Bresil, et l'autre de l'Amerique du Nord." From this statement it appears that Aubé was aware of the species from North America that LeConte described 25 years later as *Colpius inflatus* and that Aubé considered it to be congeneric with *Suphis.*

To compare further the adults of *Colpius inflatus* to adults of *Suphis*, we examined the prosternum of *C. inflatus* and the prosternum of a species of *Suphis* with a scanning electron microscope and found nothing in their shapes that was enlightening. We also examined the dorsal and ventral surface sculpture of both specimens with the scanning electron microscope and found that the densely punctate *C. inflatus* has a cluster of tubelike structures (Figs. 5, 6) of undetermined function in most of the punctures and a few of the punctures contain only a stout seta. The specimen of *Suphis* is much less densely punctate and the punctures lack the tubelike structures present in the punctures on *inflatus.* We do not consider these differences, although distinctive when seen on the micrographs, as generic characters; they are no different than the variation in punctation we see among species of *Hygrotus*, species of *Hydroporus*, and among species within other genera.

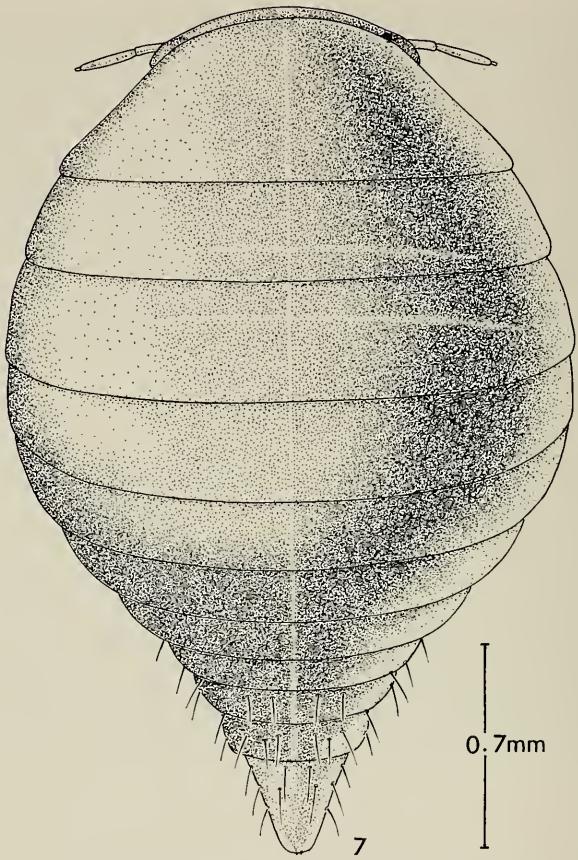



Fig. 7. *Suphis inflatus* (LeConte), larva, habitus, dorsal view.

The lateral margins of the prosternum are narrow and the laminate metacoxal processes are almost parallel sided in *Suphis*. In *Colpius inflatus*, the lateral margins of the prosternum are broader and the laminate metacoxal processes are strongly divergent posteriorly. However, another undescribed species with the angulate *inflatus*-like prosternum has the laminate metacoxal processes almost parallel sided as in *Suphis*. Therefore, we consider these differences comparable to those that occur between species within other genera.

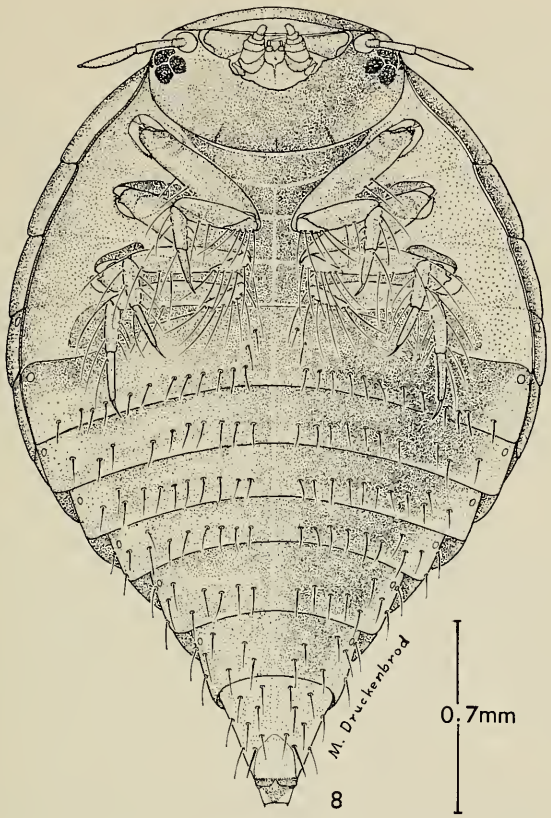



FIG. 8. *Suphis inflatus* (LeConte), larva, habitus, ventral view.

The larvae of three noterid genera have been described and because each of these has distinctive larvae, it was hoped that a comparison of the larvae of *inflatus* and *Suphis* would help determine whether or not they are two valid genera. The distinctive gibbose and fusiform larvae of *Suphis* spp. resemble the adults in shape and have been collected frequently in association with adults in the neotropics. With *Suphis* larvae available, a search was made by Folkerts for larvae of *Colpius inflatus* so that larvae of the two genera could be compared. Larvae of *Colpius inflatus* were collected and a subsequent comparison of these larvae with larvae of *Suphis* revealed no

morphological differences comparable to those that distinguish larvae of other noterid genera.

The only differences found between the larvae of *Colpius inflatus* and larvae of *Suphis* were as follows. The larva of *inflatus* has a slightly more impressed alutaceous sculpture on the terga, a slightly different arrangement of the setae on the sterna, and the last abdominal segment reddish yellow and contrasting with the preceding segment; the larva of *Suphis* has the last abdominal segment the same castaneous color as the preceding segment.

As a result of our study of the adults and larvae we believe that the differences we found are specific ones and are not sufficient to maintain *Colpius* and *Suphis* as separate genera. Therefore, we relegate *Colpius* to synonymy under *Suphis*.

### Genus *Suphis* Aubé

*Suphis* Aubé, 1836, Icon. hist. nat. Coleop. Europe 5:207; type of the genus, *Suphis cimicoides*, by monotypy; type-locality: "Cayenne et au Brésil."

*Colpius* LeConte, 1861, Smithsonian Misc. Coll. 3(136):40 (described as a new genus but without included species).—LeConte, 1863, Smithson. Misc. Coll. 6(167):22 [*Colpius inflatus* described and becoming type of the genus by subsequent monotypy]. [NEW SYNONYMY.]

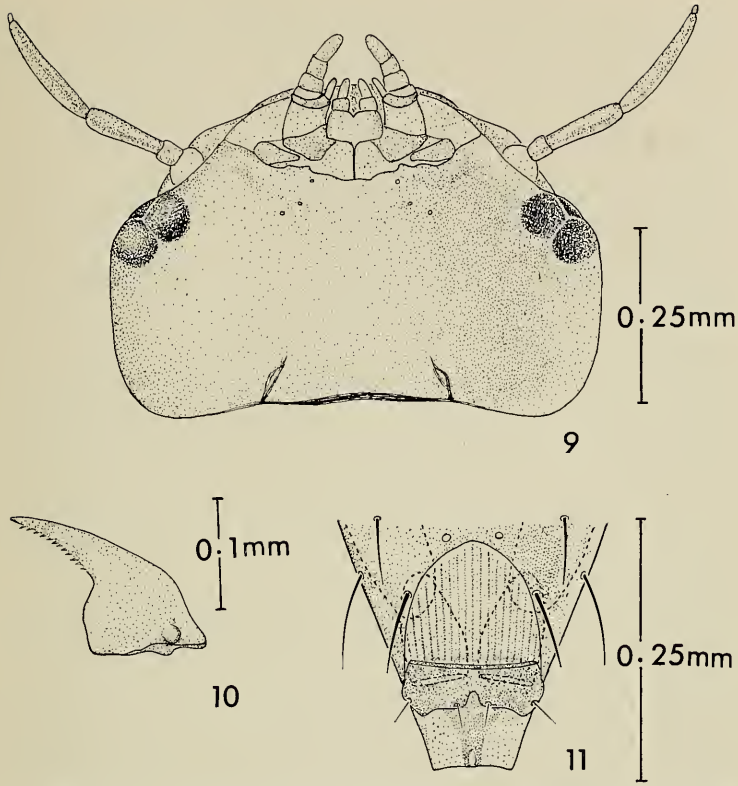
### *Suphis inflatus* (LeConte), new combination

*Colpius inflatus* LeConte, 1863, Smithson. Misc. Coll. 6(167):22.

### Description of the Third-instar Larva

Length 2.8 mm; greatest width of pronotum 1.3 mm. Body form (Figs. 7, 8) fusiform and gibbose; head retracted and mostly hidden in pronotum. Color castaneous except genae, hind margin of head dorsally (hidden beneath anterior edge of pronotum), ventrolateral margins of thoracic segments, ventrolateral margins of 1st abdominal segment, last abdominal segment, and longitudinal stripe on middle of abdominal sterna light reddish yellow; legs and thoracic sternites between coxae light reddish brown.

Head (Fig. 9) broader than long, ovoid, compressed dorsoventrally. Ecdysial cleavage lines widely separated at base, constricted near midlength, and terminating midway between point of antennal insertion and anterior margin of head. Labroclypeus feebly emarginate medially. Ventral surface of head glabrous except 2 widely separated tentorial pits at base of head. 6 oval ocelli in each ocular area; 2 large ocelli above




Figs. 9–11. *Suphis inflatus* (LeConte), larva: 9, head, vv; 10, left mandible, vv; 11, last abdominal segment, vv. vv = ventral view.

temporal margin, 2 medium ocelli on temporal margin, and 2 medium ocelli below temporal ocelli.

Antenna cylindrical, 4 segmented; 1st segment short and broad; 2nd and 3rd segments longest and broad; 2nd segment about ¾ length of 3rd segment; 4th segment short and slender.

Mandible (Fig. 10) stout and broad at base, curving, and tapering to slender apex; serrulate on inner margin. Maxilla with trapezoidal stipes. Palpifer narrow, straplike, bearing slender cylindrical galea on inner margin. Maxillary palpus 3 segmented; 1st and 2nd segments subequal; ultimate segment longest, twice as long as penultimate segment. Labium small, rectangular, glabrous; ligula absent. Labial palpus short, stout, 2 segmented; apical segment longer than basal segment.

Pronotum, mesonotum, and metanotum strongly convex dorsally and

arcuate laterally. Pronotum glabrous. Meso- and metanotum each with 4 small lateral setae; 1 on each lateral margin at about midlength and 1 near each posterolateral angle.

Legs short, 5 segmented. Foreleg with coxa longer than femur and bearing 1 seta on dorsal surface and 6 long setae on ventral surface; trochanter about a third as long as femur and bearing 7 long setae on ventral surface; femur about half as long as coxa and bearing 1 long seta at apex and 1 short seta at base on dorsal surface and 3 long setae on ventral surface; tibia slightly shorter than tarsus and bearing 2 long setae on dorsal surface and 4 shorter, stout setae on ventral surface; tarsus bearing 1 long slender seta near base and 1 small short seta at apex on dorsal surface, 1 small short seta on ventral surface at base and 2 slender tarsal claws, outer (upper) claw slightly shorter than inner (lower) claw.

Abdomen of 8 distinct segments. Terga of segments 1 through 6 each separated from sterna by pleural suture. Segments 7 and 8 without pleural suture, fused and completely sclerotized, cylindriform, and tapering posteriorly. Tergum of segment 5 with a few lateral setae. Terga 6 and 7 with lateral setae and a transverse row of setae. Tergum 8 with 3 lateral setae on each side and 2 pairs of setae on discal area. Sterna of abdominal segments with rows of setae as illustrated (Fig. 8). Last tergum of abdomen with truncate apex. Last sternum with inverted U-shaped membranous area (Fig. 11).

Lateral tracheal trunks terminate between last tergum and sternum. Spiracles present on abdominal segments 1 through 7 as follows: 1 on each anterolateral angle of 1st tergum and 1 on each anterolateral angle of sterna 2 through 7.

Young (1954) reported *inflatus* from Florida and Cuba. We have seen specimens also from South Carolina, Georgia, Alabama, and Louisiana. The larvae of *inflatus* used for this study came from the following locality: Florida, Gilchrist County, 7.9 miles south of Fort White on Route 47, 13 Sept. 1969, G. W. Folkerts, 4 specimens.

The larva of *Suphis inflatus* (LeConte) may be distinguished from the known larvae of other genera of nearctic Noteridae by the following key.

KEY TO THE KNOWN LARVAE OF GENERA OF THE NEARCTIC NOTERIDAE[1]

1. Mandible with a stout preapical tooth; 3rd antennal segment not longer than 4th antennal segment ..... *Suphisellus* Crotch
   Mandible not strongly toothed, simple or serrulate; 3rd antennal segment more than twice as long as 4th antennal segment ..... 2
2. Body form gibbose; mandible serrulate; 3rd antennal segment about 12 times longer than 4th antennal segment ..... *Suphis* Aubé
   Body form not gibbose, cylindriform; mandible simple; 3rd antennal segment about 3 times longer than 4th antennal segment ..... *Hydrocanthus* Say

[1] The larvae of *Notomicrus* and *Pronoterus* are unknown.

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